

NOTE-BOOK

ANIMAL

PHYSIOLOGY

1926

Kingsman

L
3

Physicalische Chemie

Permeability.

semi permeable membrane = cell membrane, 半透膜, 細胞膜
1. 透過性

Semi permeable 半透膜 = 膜 = 透過性, 分子, 大分子, 小分子, 透過性 = 透過性

又 membrane 1. 物質 = 透過性, 2. 透過性, 3. 透過性, 4. 透過性, 5. 透過性, 6. 透過性, 7. 透過性, 8. 透過性, 9. 透過性, 10. 透過性

2. 透過性, 3. 透過性, 4. 透過性, 5. 透過性, 6. 透過性, 7. 透過性, 8. 透過性, 9. 透過性, 10. 透過性

1. protoplasm の透過性 = 透過性, 2. colloid, 3. 透過性, 4. surface tension, 5. tension, 6. colloid, 7. 透過性, 8. 透過性, 9. 透過性, 10. 透過性

又 permeability, 透過性, 1. ion, 2. 透過性, 3. Lillie (1911), 4. Arenicola larva (Annelida) の透過性, 5. 透過性, 6. isotonic (osm. pressure) + NaCl の透過性, 7. cell membrane の透過性, 8. 透過性, 9. 透過性, 10. 透過性

1. 透過性, 2. 透過性, 3. 透過性, 4. 透過性, 5. 透過性, 6. 透過性, 7. 透過性, 8. 透過性, 9. 透過性, 10. 透過性

Mc. Clendon (1912) の透過性, 1. waste product の透過性, 2. permeability, 3. waste の透過性, 4. Mc. Clendon, 5. Fundulus egg の透過性, 6. 透過性, 7. 透過性, 8. 透過性, 9. 透過性, 10. 透過性

ie Ca^{2+} physiological regulation = Dampfer, 1st + 2

Mg²⁺ 神经, excitability ↑ 下降. MgSO₄ 镇静剂 = +ve

+ myn. nerve cell ϕ = penetrate $2m$ $r + \gamma$ $\bar{K}(\bar{D}) = 2m + 1 + 2m + 1$
 $\bar{a}_i \bar{K} \sim 1 \wedge \bar{K} \sim 2$

又 Mg^{++} , Ca^{++} 与 $MgSO_4$ 拮抗作用在 $CaCl_2$ 注射
2ml 10% 时。

2" mn. 新物系 24 7 43 2, pilu, 成'長 = 14. 2 + 7

Cu' 有毒 + 9. spirogira + 11. の微量産物なり。

Hg, Ag 有毒。これら非常=少くとも2つ入り。2つは作用ヲ

'Oligodynamic action' \rightarrow

Al⁺⁺⁺ 土壌中の water absorption = $4 \times 7 + 4 \times 26 = 148$

Cl' 245 + 1 神經、~~27~~²⁷ 211. NaCl, K' = NaBr 7 用 7 7 7
神經、同位域 (Wyss, 1906)

HCO_3^- 而肉: rhyssa 保口必要又胸1部

PO_4^{III} 心臟，活動-必要

NO₃ 植物生长=必要+充足 植物生长不明

Actions of Electrolyte-mixture.

Loehr (1903) = 170 = 24 Grammalus = NaCl 2.1 cane sugar, isotonic solution (2.1% 同濃度) = 2.1% 糖溶液 = 2.1% 糖 + 0.9% NaCl 2.1% 糖

antagonize Na^+ , Ca^{2+} etc, \downarrow in. dist. wat. + cane
cane \uparrow Na^+ , K^+ , Ca^{2+} / 才二, 刺金
排水 + 同 \propto proportion = + with - 非 $\frac{1}{2}$ = 真, $\frac{1}{2}$ + 3.

故 = Loeb, 油水中, 2001, ion, 新合, 味, 1E17 + 1 cell, normal + semi-permeability, 1902 = 12.5 + 107 7.0.0.0.

Loeb & Wastanbys (1911) = 1st osm. pr. = affect + 1st Fendulus
 7 本利用 實驗結果。kel, 7 concentration \rightarrow B-int \rightarrow NaCl

neutrice 207. $B+1$. 208. chemical compound 712a. ~~181~~
 209. K₂ neutrice 208. Fundulus 7 181. Na

2. K 为紧集, f 在 K 上连续, 则 f 在 K 上有最大值和最小值.

mg' 1 場合 Ca' 程度強々 +1. with valency 1 程度 +1.

20, 事实的 electron 7 交互. antagonistic + 120 + 0.100% 11
新合. 一定の中.

$$\begin{array}{ccc} \text{Na}^+ & \longrightarrow & \text{K}^+ \\ \downarrow & \nearrow & \uparrow \\ \text{Mg}^{2+} & \longleftarrow & \text{Ca}^{2+} \end{array}$$
$$-1211.27 \quad Na:K = 5:1$$

amion, $+ \frac{1}{2} \text{H}_2 = \text{H}$, $\text{Cl} + \text{SO}_4 + \text{H}_2 = \text{antagonize}$ in

1420.00.00

Corpuscle, 呼吸管の調節は呼吸性により

は HbO_2 結合能の調節により行われる。

Arterial P_{O_2} 159 mm P_{H_2O} 7.29 (Respiration: 呼吸器)

Ven. P_{O_2} 38 - 7.29

呼吸管の P_{H_2O} 調節は、呼吸管の

呼吸管の H^+ concentration の調節により行われる。organic acid の

調節により行われる。Hasselbalch の式は次の通りである。

Fluorescent P_{H_2O} 7.34 P_{CO_2} 38.9 mm

Phosphatase 9.36 43.3

呼吸管の P_{H_2O} 調節は、呼吸管の調節により行われる。呼吸管の調節は、呼吸管の調節により行われる。

Coronary diastolic 7.12

regulation, 呼吸管の調節は、呼吸管の調節により行われる。呼吸管の調節は、呼吸管の調節により行われる。

Winterstein の式は、呼吸管の調節は、呼吸管の調節により行われる。呼吸管の調節は、呼吸管の調節により行われる。

CO_2 $H^+ = 5$
lactic acid $P_{H_2O} = 3$) の調節により行われる。

呼吸管の調節は、呼吸管の調節により行われる。呼吸管の調節は、呼吸管の調節により行われる。

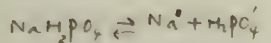
呼吸管の調節は、呼吸管の調節により行われる。呼吸管の調節は、呼吸管の調節により行われる。

Haldane (respiration) の呼吸管の調節は、呼吸管の調節により行われる。呼吸管の調節は、呼吸管の調節により行われる。

Oxygen luck の呼吸管の調節は、呼吸管の調節により行われる。呼吸管の調節は、呼吸管の調節により行われる。

呼吸管の調節は、呼吸管の調節により行われる。呼吸管の調節は、呼吸管の調節により行われる。

(von Slyke)



[H⁺] of seawater

Depth of water: 7.82-8.19 at 1000 m. (1000 m) - 1000 m

Depth of water: 7.82-8.19 at 1000 m. (1000 m) - 1000 m

Depth of water: 7.82-8.19 at 1000 m. (1000 m) - 1000 m

Palagische (V & W)

Depth	N. W.	Atlantic	Mediterranean	Black Sea
	5-1000 ft.	N. of Portugal	between Sicily & Africa	
0	8.13	8.22	8.23	8.34
100	8.09	8.13	8.21	7.86
400	8.07	8.04	8.19	7.53 (H. S. H. S.)
1000	7.98 (H. S. H. S.)	7.91	8.14	7.26
2000	-	7.95	-	-
3000	-	-	-	-

Depth of water: 7.82-8.19 at 1000 m. (1000 m) - 1000 m

Mayev (1919) at 1000 m. (1000 m) - 1000 m

7.82-8.19

H. S. H. S.
S. H. S.
H. S. H. S.

7.82

Depth of water: 7.82-8.19 at 1000 m. (1000 m) - 1000 m

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[H⁺] of body salt of marine animals.

Depth of water: 7.82-8.19 at 1000 m. (1000 m) - 1000 m

S. W. 8.1-8.2 at sea urchin 7.7-7.8.

Strombus

7.5

(McClendon)

Depth of water: 7.82-8.19 at 1000 m. (1000 m) - 1000 m

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Colloidal State.

[illegible]

$6 \mu m$	Amicron	2×10^4	} ordinal state
$6 \mu m - 1 \mu m$	ultramicro <small>(skin, vein)</small>	ultramicroscope $\times 2 \times 10^5$	
$0.1 \mu m$ ----	micron.	immersion $\times 2 \times 10^7$	

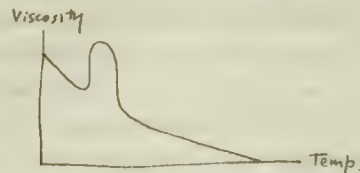
2. 9. 1. 水分子 55% + 4 + 1 = 17 hydrophobic colloid + 27

水に溶けやすい hydrophilic

ions, metals vs sulphate colloid + hydrophobic vs hydrophile + albumen + γ -glob

optical property. organic colloid - 有机分散体系 opaque + 不透明
无机分散体系 inorganic colloid 分散系 / emulsion 乳剂
分散体系 乳剂 分散体系 分散体系 分散体系 分散体系 分散体系
分散体系 分散体系 (ultrafiltration) 分散体系 分散体系 分散体系
分散体系 分散体系 分散体系 分散体系 分散体系 分散体系 分散体系

viscosity hydrophobe, e.g. 3% HCl viscosity 40 cP
hydrophile, e.g. 2% 聚丙烯酰胺 - 1% HCl viscosity 120 cP
a protein, colloids 蛋白质 + 1% 氯化钠.



surface tension. = hydrophobic (水に溶けない) + hydrophilic (水に溶ける)

Brownian movement 100年以前 Brown の 花粉の運動
 27 Perrin (1908) の 説明: 1. 液体中、粒子の乱れ、分子の衝突
 2. 26517 分子

colloid, 437, diffusion velocity, 438, velocity
of mass, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

Pepsin	12 000
Labferment	14000
Invertase	14000
Ovalbumen	17100

colloid, sol. as ~~electrolyte~~ ^{electrolyte} 7 1. 2. 3. semi-permeable membrane 7 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 8

protein colloid, charge = electrostatic & ionic charge.
 charge = ionic charge
 coagulation

denaturation: Protein etc. chemical reaction

Robertson: dehydrate

crystalloid & colloid

etc.

crystalloid & "semicolloid"

protein etc.

schupcolloid

absorption

schupcolloid

colloid

protein, particle

hydrophilic colloid

absorption

protein

emulsoid-hydrophilic

protein

salting out

protein particle



electrolyte

change of state

staining fluid

adsorption of tereside

Fermentation

vitatal force

Farment, catalytic action

pepsin, trypsin

catalyses

chemical process, velocity

reaction

very small

over bone

catalyst

hydrolysis

dehydration

oxidation, reduction

catalytic action

high temperature

35°C 5% Lactose

2N HCl

but lactase

protein

100°C

8 hours

pepsin

trypsin

catalyses

enzyme

H^+ in ~~activity~~ acidity more acidic so pKa more alkali + 10/12
 $\text{E} = 7\frac{1}{2} \text{ p} + \frac{3}{2} = 10.5$ acidity 7.0

invertase.. $P_H = 4.4 - 4.6$
amylase (17) 4.4
" 18 amylase 6.0

27.1	1.6	1.8
トナリシ	7.7-8.3	
	7.0	

urease	7.0
phosphatase alkaline	6.6
lipase	7.1

begin, Tryf in a dist. dist., then 145 neutral + 1

Stoffwechsel (Metabolismus)

4. general remarks.

細胞の中が 1 個の function を行うとき energy がいる。... O_2 は bodystuff
 だ。... digest, absorb + 4 time = ... oxidation ... chemical
 process ... end product ... 外に出る ... kidney ... whole
 change ... metabolism ... 1. ... 2. ...
 ... — Catabolism ... replace ... — Anabolism ...
 energy ... Potential ... kinetic ... energy ...
 ... oxidation ... fat + carbohydrate ...
 $CO_2 + H_2O$... protein ... CO_2 ... oxidation ...
 ... 空気中 ... O_2 ...
 ... metabolism / activity ...

- energywechsel + stoffwechsel, 64% body-constituent + 1% body metabolism 71 + 67 g protein = 138

4 metabolism 70% 70% 15%, adult, organism" D.S. 生活の維持
maintenance = 20% 85% 25% 25% 25% 25% 25%
1/30, 25% 90%. 2-4% 15% 11% maintenance = 12% 12%, 2-4% 2-4%
2-4% maintenance = 12% 12%.

Körpersubstanz, Neubildung, Stoffwechsel, Baustoffwechsel + ZB.

2) 断尾的幼年大鼠要断尾地，必需在18 days 之前，即
 1) 幼大鼠的 gliadin 于 530 days 前，即 one young rat = gliadin
 3) 大鼠生长成熟期，即 growth: 断尾大鼠于 18 days weaned
 tear process: 断尾大鼠于 18 days weaned

June 2.

1. 音(1), 全部一致 + correct + 0.97, 5. 'h' 处 + 0.70, Ph. 成: 0.46.

2.56/3: narrow, pent 1/2 growth + 1/2 in. etc.

Bayliss = 2720222 - 81 motor 82m 22. Fe, Cu, Zn + 材料
21. 2.5 metal + 2.5 4 用 off the insurance natural. 变, 1700000

2. 某厂生产的产品，其质量指标服从正态分布，且已知其标准差为 10。现从该厂生产的产品中随机抽取 16 件，测得其平均值为 120。试求该厂生产的产品质量指标的 95% 置信区间。

enzyme, also waste product 7 元素 21.5% 水, CO_2 2.4% 2.7. 1.2.2

10. metal: 金属 → 火 + 土 Kidney Urea: 肾 子 亥 金 然 也 说 物 也 然 乃 子 亥

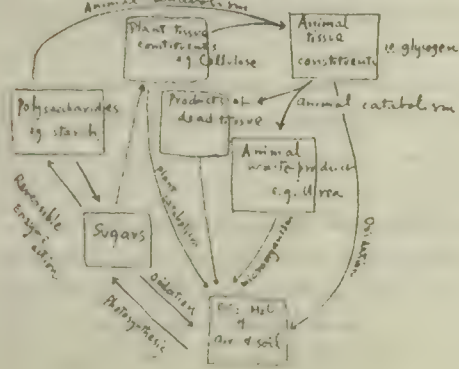
analytic process: $100\%, 100\%, 100\%$. 100% = 100% + chemical

constituent, i.e. $\frac{1}{2}$ of 12, i.e. chlorophyll / + 10% of 12.

分子量, \bar{M}_n 数均分子量, \bar{M}_w 重量平均分子量, \bar{M}_z 平均分子量, \bar{M}_v 平均分子量, \bar{M}_w/\bar{M}_n 多分散性指数

Neutral Amino acid. α -amino. is in ready-made form $\frac{1}{2}$ of time.

" 爲 1979, 8月... 總場 1979年 (Far - 1979).



①...②... 元素 = 1回 the metabolic cycle を繰り返す。

energy = 22.371 chemical reaction. 74.2 oxidation 73.37. heat = 22.371 + 1

1986年12月25日 1986年12月25日

山梨 \longrightarrow CO 122 \longrightarrow H_2SiO_3Ag 5/4 J (calory 1080)

$\text{C} \longrightarrow \text{CO}_2$ 406. $\text{C} \longrightarrow \text{H}_2\text{SO}_4, \text{Ag}$ 615 .. 1780

Elements $\rightarrow H_2SO_4 \dots 98.2 \dots 2160$
 $\rightarrow H_2SO_3 \dots 140 \dots 1812$

Elements \rightarrow $\left\{ \begin{array}{l} \text{Fe(OH)}_2 \quad 591 \quad 1510 \\ \text{Fe(OH)}_3 \quad 122 \quad 1910 \end{array} \right\}$

$$\text{Fe}_2\text{O}_3 \quad 1107 \quad 1140 \quad \rightarrow \text{H}_2\text{S}_2\text{O}_6 \quad 1170 \quad 2400$$

1840 H₂O₂, 云云 → 今 2H₂O₂ oxidation → P → 2, 2 → 2 + 2

度, 意比一 张 4 2, 1, 2 2 + 111 algebraic sum. $\phi = \overline{\phi} + 2$ process, $n = 112$

i.e. $\Phi \rightarrow \Psi$ in process. $\exists n$ s.t. $\Phi \rightarrow \Psi$ in const. n

$$1. \quad \text{NH}_3 + \text{HCl} = \text{NH}_4\text{Cl} + 42.1 \text{ cal}$$
$$\text{NH}_4\text{Cl} + \text{Ag} = \text{NH}_4\text{Cl}_{\text{Ag}} - 3.9''$$
$$\text{NH}_3 + \text{HCl} + \text{Ag} = \text{NH}_4\text{Cl} + 78.7$$

21599. "metabolism, it is..."

carbo-hydrate, heat-formation. 1st $\frac{1}{2}$: sugar as protoplasm... $\frac{1}{2}$

第二序の二つの断片は、多量、共に出土。

Brennwert. 1 gram O_2 in compound + H_2H : $\frac{1}{2}$ cal heat

omt 9 in. (Fart, stärke etc. efter 34195 minimum). Rik 13.198

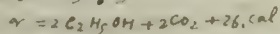
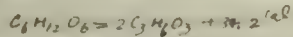
maximum = styrke, 3.530, \bar{x} 44. 3.315 + 11.) higher annual in

Food stuff / oxidation Carbo hydrate 11.4% sugar 7.5%

$$2 \text{ i } \text{CO}_2 + \text{H}_2\text{O} + \text{C}_6\text{H}_{12}\text{O}_6 \rightarrow \text{Sugar} + \text{O}_2 = 114 \text{ mm / 5\% hydrolysis}$$

Lactic acid + 17917.7 = 26682.000 + 1.8 = ...

Having ... 6.9.17 7.1.17 fermentation etc.

[illegible][illegible]

Body constituents

§ Water contents of Dry substance.

invertebrates 11.82% water. $\frac{82}{100} \times 11.82 = 9.6924\%$ $\frac{100}{100} \times 9.6924 = 9.6924\%$
 for eip. arthropoda: Oniscus $\frac{100}{100} \times 68.147\% = 68.147\%$ $\frac{100}{100} \times 68.147 = 68.147\%$

<i>Rhizostoma</i>	95.392	1.608	3.000
<i>Limax</i>	82.066	16.409	1525

④ Nitro in dry substance 5% 0.4-0.6 lb. 極端 + 11" Dry sub.

Cestus (misy)	77. 76	0.24
Salpa	77. 74	0.26

in ϕ -energy P_2 : dry substance %.

Amphioxus	12.8
Haliastur	27.3

海水、海水、水、塩分、干物、dry substance の 0.2 1.5% 程度、70%。

陸虎山 7 44 49 35.51

哺乳類: 胎生 + 乳 = 水少 $\rightarrow F_{1/2}^2, E, F_{1/2}^2 \geq 1$. Vertebrate, embryological development

1st. Abdominal water content, etc. 79.50.

160) 317-	66.4	33.6	
adult-	58.5	41.5	
white rat per 1 kg.	H ₂ O	org. sub.	ing. sub.
foetus 822.	872	117	11
newborn.	828	153	19
8-day-old	968	211	21
full grown	713	242	35

cash substance
Σ 1 = 1 skin

Na ₂ S	NaCl	K ₂ S	K ₂ CO ₃	K ₂ PO ₄	MgCO ₃
!	0.83	404	7296	0.96	12.10
FeCO ₃	SiO ₂				
1.02	0.90				

K_2O and $NaCl$ K_2O_3 K_2S $CaCO_3$ $CaPO_4$ $MgCl_2$ $FePO_4$ MnO_2 SiO_2
 Limax 0.18 0.02 0.11 2.67 2.67 0.15 0.05 0.01 0.01

inorganic constituent Na, K, Cl, Mg + trace of Zn, Cl,

CO_2 , PO_4 , S (in ash) + trace of Cu, Mn, Fe, Zn, Cu, ... (in ash) ...

milk. In ash of milk + trace of ash constituents + ... adequate proportion + ... von Bunge ... milk + blood ... body constituent ... Fe ... body ...

Ash const.	Entire body (m/z)	Milk (m/z)	Blood serum (m/z)
K_2O	8.5	10.7	2.4
Na_2O	8.2	6.1	52.9
CaO	35.9	34.4	2.1
MgO	1.6	6.5	0.5
Fe_2O_3	0.14	0.14	0.12
P_2O_5	39.8	37.5	5.9
Cl	7.3	12.4	47.9

milk ... glands + secretion + ... Bunge ... milk ... purified protein, fat, ... (Osborn & Mendel) ...

$CaCO_3$	174.8	H_2SO_4	9.2
$MgCO_3$	24.2	Citric acid, 1% 111.1	
Na_2CO_3	34.1	Fe-oxide 1.5 H ₂ O 63.4	
K_2CO_3	141.3	KI	0.020

H_3PO_4 103.2 $MnSO_4$ 0.099
 HCl 53.4 NaF 0.248
 $K_2Al_2(SO_4)_2$ 0.245

NaCl ... K^+ antagonize ... Vegetation ... more salt ... K^+ ... Na^+ ... Na^+ ...

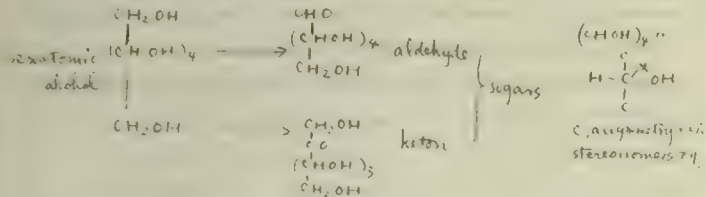
Cl ... Cl^- ...

Fe haemoglobin ... Fe^{2+} ... Fe^{3+} ... Fe^{2+} ... Fe^{3+} ... Fe^{2+} ... Fe^{3+} ...

egg yolk + meat ... Fe^{2+} ... Fe^{3+} ... Fe^{2+} ... Fe^{3+} ...

Ca ... Ca^{2+} ... Ca^{2+} ... Ca^{2+} ... Ca^{2+} ...

(A) non-nitrogenous.

$$n \left(+ (H_2 + O) \right)_n \quad \text{Bayer 11 6}^{\text{r}} 4' 2' 3' 7''$$


4 Assigno C per. It is one's per.

1. aldeose, 2. 3. 4. 5. 6. glukose, mannose, galactose.

Glucose, Fructose, Lactose

serum, 78% IgG, 16% IgA, 6% IgM Hexose 0.7 C₆H₁₂O₆

monosaccharides, i.e. glucose, Dextrose, Traubene

- Food → grape → 31 2" Digestive tract / 24h in 13"

class larvae - 7th, 8th & 9th. 2 Honey & 10th

Disaccharide, Saccharose 7 ist aus Glukose + Fructose (Lactulose)

1892

galactose, milk ϕ , Lactose ϕ 12% milk + galactose + glucose \rightarrow + 10
glucose ϕ 10% 10% 2 1/2% ϕ 10% cerevisia ϕ 10% 10% \rightarrow 10%
yeast ϕ 10% 10% + 10% 10% ϕ 10% 10% \rightarrow 10%

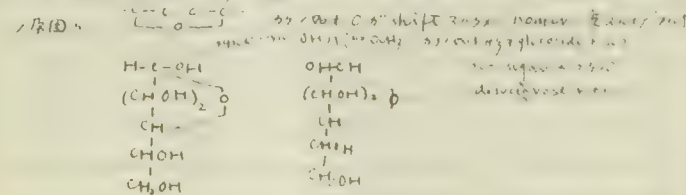
glucosamine $C_6H_{13}N_2O_5$, to 1511 + 4 = 1515 - 1512 = 3. 8. 1512 + 3 = 1515.

Yield of Mucin 5: decompose 21 + 4 = 25 protein 5. 1512 + 3 = 1515.

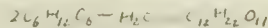
5. 1512 + 3 = 1515 intermediate, 43, 1512.

nucleoproteins, sugar complex to form a 2 organic and 5 P₇ 10
nucleic acid + protein 188 2.157 2.157

Ginecosides. Steroids + sugar complex + 11 糖苷 - 7- Sinagins, Simin
Sinalbin, Amygdalin, Saponin, Salicin etc. sugar + 20 糖 + 14
if 29 糖 + 27 糖 + 17 糖 + 12 糖 + 20 糖 + 20 糖 Multi potation + 20

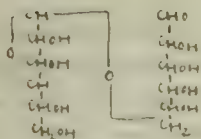


Disaccharides = ... monosaccharide + ...

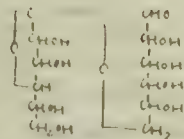


mélasse, lactose, saccharose + glycose

Mucosae .. glu + glu. Lactose .. glu + gal. saccharose .. glu + Fr. +



mat 1000



La: Toy

2.5. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845.

Polysaccharide, $n \text{ } ^{16}\text{H}_{12}\text{O}_5 + n \text{ H}_2\text{O} = (\text{C}_6\text{H}_{10}\text{O}_5)_n$

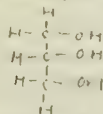
80%, poor starch + α -D-glucose, arabinohydral 7.15% and 1.2%,
monosaccharide + 2.1% from α -D-glucose, starch, 1.1% + 1.1% amylose
+ 1.1% + 1.1% maltose, 1.1% + 1.1% monosaccharide + 1.1% + 1.1%
protein + 1.1% + 1.1% + 1.1% + 1.1% + 1.1% + 1.1% + 1.1% + 1.1%
+ 1.1% + 1.1% + 1.1% + 1.1% + 1.1% + 1.1% + 1.1% + 1.1%

1. H_2O is a very small molecule and it is not in the water phase.
 2. H_2O is a very small molecule and it is not in the water phase.
 3. H_2O is a very small molecule and it is not in the water phase.

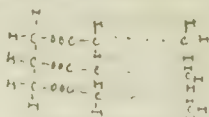
[illegible]

2794. - 114. 6. 2794P. in $\frac{1}{2}$ in. (2) + 9.5 (1) = 1. in. (15%) (2). 180. 180. 2794. in. cellulose + 180. cellulose + 180. in. mechanically - 180. 180. movement of 2794. in. 180. 180.

Fats 脂肪 is lipophilic, stored in muscle, adipose tissue, etc. $\text{ATP} \rightarrow \text{ADP}$
脂类中 can. "store" protoplasmic to store Fat = fatty acid +
alcohol react + glycerol + water, H_2O neutral + H^+ means to be
lipid = more glycerol + $\text{C}_n\text{H}_{2n+1}\text{CO}_2$ + H_2O + H^+



364:2-01.



typical par-

b) 1:1 Palmitic acid + glycerol → neutral ester 75% Palmitin + 25%

palm. tree. $C_3H_5(OOC C_{15}H_{31})_3$

Steam $(3H_2O + C_{17}H_{35})_3$

Formic 1-100H

4.6.11 CH_3COOH

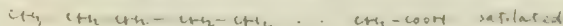
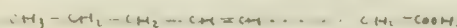
propionic $\text{CH}_3\text{CH}_2\text{COOH}$

Butyne $(\text{CH}_3\text{C}\equiv\text{CH})_2\text{COH}$

palmitic $\text{CH}_3(\text{CH}_2)_{14}\text{COOH}$

stearic $\text{CH}_3(\text{CH}_2)_{16}\text{COOH}$

unsaturated fatty acid \therefore $\approx 1.3 \times 10^6$ oleic acid \therefore in H_2O
 \therefore far more \therefore $\text{C}_3\text{H}_5(\text{OOCCH}_2)_3$ unsaturated.



palmitin, stearin, olein = 2.06 ± 0.11, 7.14 ± 0.16, 14.56, adipic acid = 0.01

and 2. amino acids of metaprotein + ... hydrolysis ...

protein \rightarrow metabolite \rightarrow hydrated protein \rightarrow dipeptides \rightarrow amino acid

simple protein derived protein

fibronectin, globulin, γ and μ immunoglobulin, albumin, the basement collagen, ornithine, 11-oxo- γ -globulin, protamines, vitamin, lupine.

Compound proteins (Glycoproteins, Chromoproteins, Haemoglobin, Haemocyanin)
 Globoproteins, etc.

2. Eine molekulare, unidimensionale Kette mit N Teilchen, die fest fixiert ist (z.B. Polymer in Lösung).

2. The same was said - 213. 4. David Thompson
 1. The same was said - 213. 4. David Thompson

[illegible]

1. The first part of the paper discusses the importance of the study.

21. 00 + 08 822 000

2-152/56 017 176 450 000

2. (2, 4-diamino-6-oxo-4H-pyrimidin-5(1H)-ylidene)hydrazinecarboxylic acid

$$\text{H}_2\text{C}(\text{CH}_2\text{N}(\text{CH}_3)_2)\text{COOCH}_3$$

4) Lancini

5) Isotencine

6. Caprine - glycolauric

7) Phenylalanine

8) Tyrosine

9) sizing

10) cystine

(B) imino amine-dicarboxyl acids

11) Aspartic acid

12) glutamic acid

(c) Diamino monoalkyl acids

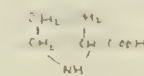
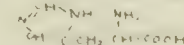
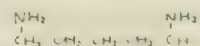
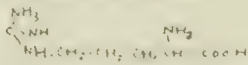
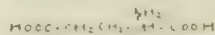
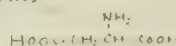
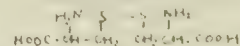
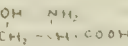
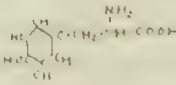
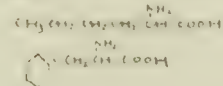
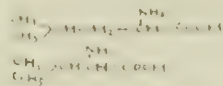
12) Arginine

14) Lysine

(D) Heterocyclic amine only

5) Histidine

16) Protein



June, 16.

Total metabolism.

Method. metabolic exchange of air in a rat in a calorimeter.

1. direct measurement of heat, energy of heat.

2. energy, 1700 cal. oxidation of 1 g of food (e.g. O_2 is 1100).

3. the end product, e.g. water, carbon dioxide, urea, etc. (e.g. urea is 1100).

4. the higher animal, e.g. metabolism, e.g. 1100, invertebrate.

e.g. 1100, 1100, 1100.

A) heat. foodstuff, complete oxidation of foodstuff.

B) Bomb-calorimeter (e.g. 1100) metal bomb of foodstuff, e.g. 1100, 1100, 1100.

C) Calorimeter (e.g. 1100) 15°C - 18°C - 1100, 1100, 1100.



Heat value of food, i.e. 1100, 1100, 1100.

Fat 9.3 calories.

Carb. 4.1

Protein 4.1

Starch 4.1

Sugar 4.1

Grape sugar 3.692

Cane sugar 4.116

meat 5.656

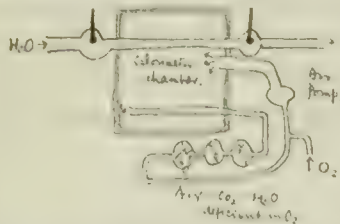
lard 9.423

butter 9.231

Protein, bomb, 1100, 1100, 1100.

metabolic oxidation of food, e.g. 1100, 1100, 1100.

etc.
 1. muscular work, e.g. 1100, 1100, 1100.
 2. heat production of animal, e.g. 1100, 1100, 1100.
 3. heat production of animal, e.g. 1100, 1100, 1100.

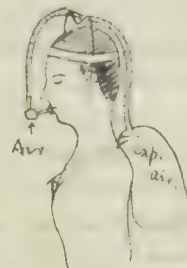


Day	H.V. of material	Cal. from body
1	2341	2414
2	2345	2386
3	2391	2413

B) oxidizing process. 1100, 1100, 1100.

e.g. 1100, 1100, 1100.

e.g. 1100, 1100, 1100.



1100, 1100, 1100.

1100, 1100, 1100.

1100, 1100, 1100.

1100, 1100, 1100.

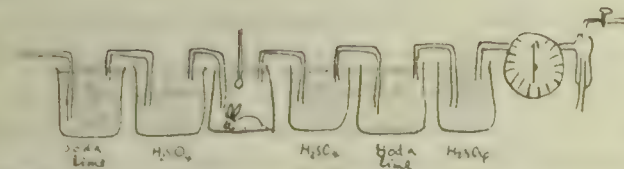
1100, 1100, 1100.

1100, 1100, 1100.

1100, 1100, 1100.

1100, 1100, 1100.

e.g. Haldane & Penhagren, Penhagren, 1100, 1100, 1100.



Resting muscular effort + work 27 gals. in 1870

O₂ absorbed per m. CO₂ discharged per m.

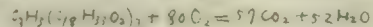
Resting	242 cc	218 cc
moderate work	1490	1224
severe work	1950	1739

2.42 liter O₂ per m. 1.61 liter CO₂ per m. 2.42 liter O₂ per m. 2.42 liter O₂ per m.

2.42 liter O₂ per m. 1.61 liter CO₂ per m. 2.42 liter O₂ per m. 2.42 liter O₂ per m.



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2.42 liter O₂ per m. 1.61 liter CO₂ per m. 2.42 liter O₂ per m. 2.42 liter O₂ per m.

N₂O: protein, 1/2 of 51 m. oxidation, 51 + 80417. 2.42 liter O₂ per m. 2.42 liter O₂ per m.

total amount of Food.	Total income						
	N	C	H ₂ O	Solids	Protein	Fat	Carbonyl
total income	8773	573	831.6	1295	199	771	449
output	5720	463	5213	5101	946	30	20

Fat 1/2 of 1/2

2.42 liter O₂ per m. 1.61 liter CO₂ per m. 2.42 liter O₂ per m. 2.42 liter O₂ per m.

Fate of Foodstuffs in animal body

history of Fat.

2.42 liter O₂ per m. 1.61 liter CO₂ per m. 2.42 liter O₂ per m. 2.42 liter O₂ per m.

Suberites? $\pm 100-215$ $C_6H_{12}O_6 = C_6H_8O_2 + 2CO_2 + 2H_2$

Glucose intermediate oxidation product $C_2 + 4H_2$ etc.

Hirudo Hease (1910) Wernberg schnecke? $C_2 + 4H_2$ etc.

etc. N₂ etc. into product. Fermentation - acetic, lactic

alcohol etc. incomplete oxidation etc. etc. etc.

ascaris etc. N₂ etc. etc. etc. etc. etc.

etc. etc. etc. etc. etc. etc. etc.

etc. etc. etc. etc. etc. etc.

N metabolism Bakteria etc. HNC_2 etc. etc. etc.

etc. etc. etc. etc. etc. etc. etc.

etc. etc.

N aus NH_3 in %
des gesamm. N

N aus NH_3 : N aus
anderen Verbindung.

Hirudo	an 17.9° 67	1.049
	an 12.3° 62	1.061
actina	100	
Isoturus	8° 15 38	1:0.00
salicurn	13.3	1:1.63
Gans	25.0	1:2.00
Octopus	18.6	1:3.00
Elidma	7.5	1:12.00
Hund	8.3	1:2.00

ferment etc. Hamstoff etc. etc. etc. etc. etc.

etc. etc. Urea secondary product etc. Liver etc. etc.

product etc. NH_3 etc. Liver etc. etc. etc. etc.
protein metabolic endproduct etc. NH_3 etc. etc. etc.
invertbrate NH_3 etc. V. V. V. V. NH_3 etc. etc. etc.
Aves etc. etc. etc.

Hamstoff N + Ammoniak N.
in % des gesamm. N

Octopus	18.6	Pegenschwein etc. NH_3 etc. etc. etc.
Ascaris	33.3	Lissam (1908)
Hirudo	62-67	24 St. 70 etc. etc. etc.
Isoturus	38	etc. etc. etc.
Hund	85-95	etc. etc. etc.

protein metabolism product etc. etc. etc. etc.

derivative etc. etc. etc. etc.

etc. etc. etc. etc.

etc. etc. etc. etc.

etc. etc. etc. etc.

etc. etc. etc. etc.

Pharangiidae, Scolopendromorpha, Crustacea, etc. etc.

Cephalopoda etc. etc. Sepia, Octopus etc.

Larvelibrandus etc. etc. etc.

Protozoa, Stylonichia, etc. etc.

purin-derivative etc. etc. etc.

pigment cell etc. etc. etc.

etc. etc. etc. etc.

Darmkanal, z. B. (Spider, 1844, 1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2

Darmwand 3"11 Suft 7 2.11

saft. klä. Raum m. abgeben + ... Drüsenzellen
Drüsen ... Zylinderepithel ...
sekret. ... Basalzelle ... Körper ...
Zymogengranula ... vacuolen ... Zell ...
Zelle ... Darmraum ... Zelle ...
frei end ... Sekret ...
Zylinderplate ...

sekretion, innervation 5/14/19, 20/10/19, 20/10/19, 20/10/19
1/12/19, 20/10/19, 20/10/19, 20/10/19, 20/10/19, 20/10/19
T 3/12/19, 20/10/19, 20/10/19, 20/10/19, 20/10/19, 20/10/19
reception 12/11, bedingungsreflex 12/11, sänger, intestinal
mucus membran, sekretion 12/11, salzsäure, achysierung,
Darm-organ, pancreas, Tätigkeit 7 abregieren Magenwände
sekretion 12/11, bedingungsreflex 12/11, pancreas, 7, bedingungsreflex
12/11, 7 bedingungsreflex 12/11, 7 bedingungsreflex 12/11

Mittwirkung - 4, 1. druse = 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837.

Absorption Ferment = wasserl. löslich = trug Nährung. Darmwand

[illegible]

Periodicity of growth & Differential growth.

pl. 16 cm. $\frac{1}{2}$ 17 $\frac{1}{2} - \frac{2}{3}$ mm.

6. 10. 1957 早 10 时 30 分 1 只 *Proctos* 在
Volumenthal 处捕得。其体长 1.5 cm，宽 0.5 cm，
1.5 cm，高 1.5 cm，其“*vol.*”为 1.5 cm。

Bedingungen.

1. $\frac{1}{2}$... Organ ... in fact 'wächst mit' ...
 2. 'proliferative potency' ... 'Selbstdifferenzierung' ...
 3. ... reciprocal families completion ... speed up ... factor ...
 4. ... 'dependent differentiation' ...

I. Aufsatzsaft

1. Physikalische Bedingungen.

或... 若... 實驗法求 Δ Osmotic pressure.

(Food factor is a later stage of development, $\frac{1}{2}$ (1st))

[illegible]



- [illegible]

- [illegible]

